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walls are folded or plaited right and left like the sides of the bellows of an accordeon, the plaits being widest at the bottom, or attached ends, and diminish outward toward the exposed surface. These cells are somewhat irregular, but are usually six sided. If a superficial or thin tangential section of the seed-coat is carefully experimented upon, the mucilaginous cells may be expanded and contracted several times before their contents so far disappear as to arrest further action.

If the student attempts to study the mucilaginous covering without making a section the expansion of the cells and the outward flow of their contents are so slow as to be disappointing. When the thin section has been brought into the field of the high power lens it is well for a neighboring student or an assistant to add the drop of water, thus giving the experimenter the entire use of his time for making the observation.—BYRON D. HALSTED.

Alaskan plants.—List of plants collected during the summer of 1885, at Ounalashka, by Mr. S. Applegate, the United States Signal Observer at that station. The list, although small, contains several species of great rarity and interest:

Cardamine pratensis L.	Festuca rubra L.
Draba hirta L.	Bromus Aleutensis Trin.
Leptarrhena pyrolifolia R. Br.	Poa pratensis L.
Epilobium angustifolium L. ? Fragments only.	Deschampsia atropurpurea Scheele.
Oxyria digyna Camp.	Deschampsia cespitosa P. Br., var. longiflora Trin.
Luzula campestris DC.	Trisetum subspicatum P. Br., var. molle Gray.
Luzula spadiacea DC., var. parviflora Led.	Deyeuxia Aleutica Vasey.
Juncus arcticus Willd.	Deyeuxia Langsdorffii Kunth.
Juncus Scheuchzeri Hoppe.	Agrostis canina L.
Carex decidua Boott. Very rare: the third station in North America. (Fide Bailey in litt. Oct. 22, 1886.)	Agrostis exarata Trin.
Carex podocarpa R. Br.	Equisetum variegatum Schl.
Carex limosa L., var. stygia Bailey.	Cryptogramme acrosticoides R. Br.

I am indebted to Dr. Vasey and Prof. L. H. Bailey, Jr., for assistance in determining the sedges and grasses.—F. H. KNOWLTON, *U. S. Nat. Museum*.

EDITORIAL.

WITH THIS number the GAZETTE for 1886 is complete. The 350 pages that we have given to our readers represent the best botanical activity of the country, and the fact that several important papers presented this year cannot appear until next, on account of the pressure upon our pages, goes to show that this activity has been unusually great. It is very evident that botanists are working now as never before in this country. Perhaps there is no more interest in the general subject of botany, but there is more independent and valuable work. Our friends have said that the GAZETTE has been no small influence in encouraging this activity. Whether this is true or not, the botanical signs for 1887 are most encouraging. American botanists are fully awake, and the next year gives promise of much good work. Every botanist should feel called upon to help along this progress, both by making some contribution to botanical knowledge himself, and by warmly supporting a botanical journal that

gives expression to these activities. That the GAZETTE has been better than its promise is the record of the year just closing, and as we clear our decks for another year it is with the determination to surpass anything we have yet done. With this promise to our friends we wish them a happy and successful new year.

THERE IS some feeling among American botanists that their labors are not fully recognized in Europe, being passed by when credit is really due them. We desire to point out one reason for this apparent neglect, a reason that our opportunities of knowing enable us to assert is a very important one, and which points to partial remedy within the control of each author. We refer to the distribution of separately printed copies of important articles contained in journals and society publications. We venture to say that the number of copies now sent by most authors to German and other foreign investigators is very small and wholly inadequate. A satisfactory distribution would require that a copy of every important research should be sent to other workers in the same line, to the prominent botanical periodicals, and to the chief libraries. If it can also be placed on sale, so much the better. If authors will take this small trouble and expense, the knowledge and recognition of American botany abroad will be advantageously improved.

OPEN LETTERS.

Orientation of Cassia leaflets.

The region about me is literally clothed with a growth of the two species of Cassia, *C. nictitans* and *C. Chamaecrista*. I notice this summer what I never happened to have observed before, that, in the afternoon especially, all the leaflets are so disposed as to present their surfaces to the declining sun. In thousands of specimens I can find no exception. This presentation of necessity gives something of a north and south trend to the edge of the leaflets, so here we have compass plants of a certain kind.

W. W. BAILEY.

Brown University, Providence, R. I.

Eupatorium perfoliatum.

In August last I collected a stout specimen of this plant, nearly four feet high, having a whorl of three leaves at each node. The leaves of each whorl were united around the stem much as in the usual form, except that there was a superfluity of tissue at the points of cohesion, thus making the bases of the leaves crispate.

J. FRANKLIN COLLINS.

Providence, R. I.

CURRENT LITERATURE.

Life Histories of Plants. By Professor D. McAlpine. pp. 296. Illustrated. Swan Sonnenschein, Lowrey & Co., London. 1886. sq. 12°.

This is a successful attempt to put the latest phases of botany in such a popular way that any intelligent person can understand them. Such attempts can not be too warmly commended, for they are important and difficult. As the intelligent popular mind becomes acquainted with these facts the chances for foundations for original investigation multiply, but the difficulty lies in